

**ANNEX
BETWEEN
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AMES RESEARCH CENTER
AND
STRATOLAUNCH, LLC
UNDER SPACE ACT UMBRELLA AGREEMENT NO. 35299 / SAA2-403646
(ANNEX NUMBER ONE)**

ARTICLE 1. PURPOSE

This Annex One to the Reimbursable Space Act Umbrella Agreement SAA2-403646 (the “Umbrella Agreement”) between Stratolaunch, LLC (“Partner” or “Stratolaunch”) and NASA Ames Research Center (“NASA” or “NASA ARC”) shall be for the purpose of supporting the analysis, testing and development of thermal protection system (“TPS”) concepts of a Stratolaunch hypersonic vehicle.

Under this annex, NASA will continue training Stratolaunch in Ames-invented TPS material processes. The goal is to train Stratolaunch personnel on how to process raw materials into Alumina Enhanced Thermal Barrier (AETB) for them to produce it for future hypersonic vehicle production. These activities support U.S. commercial access to space activities, which is a core Mission for the Agency. Each capitalized term used in this Annex One, but not defined herein, shall have the meaning ascribed to it in the Umbrella Agreement.

The legal authority for this Annex, consistent with the Umbrella Agreement, is in accordance with the Space Act, Other Transactions Authority (OTA), 51 U.S.C. § 20113(e).

ARTICLE 2. RESPONSIBILITIES

A. Upon Partner’s request and NASA’s receipt of advance payment for each task listed below (see Article 4), NASA ARC will use reasonable efforts to:

1. Develop a small AETB billet process and specification using new raw materials within ARC STAR labs.
2. Develop a large AETB billet process and specification using new raw materials within ARC STAR labs.
3. Design and build improved casting tower equipment for billet processing (increase billet size, process efficiency, billet quality).
4. AETB billet manufacture technology transfer training.
5. Provide TPS subject matter expert support related to AETB technology.

6. Provide additional process training at Ames, as needed.
7. Provide additional process training at Stratolaunch, as needed.
8. Additional AETB billet process refinement as needed to optimize processing and provide additional manufacture trouble shooting.

B. Partner will use reasonable efforts to:

1. Provide new lots of raw materials to ARC for process refinement tasks #1-#2. (Note this Stratolaunch-owned material can be provided back to Stratolaunch upon project completion. Any components made from NASA raw materials shall remain with NASA).
2. Organize virtual meetings for information exchange.
3. Provide details regarding Stratolaunch equipment and facilities for TPS processing.
4. Provide TPS billet dimensional requirements.
5. In support of Task #3, provide components per ARC specification for building newly designed casting tower. (Note these Stratolaunch-owned components can be provided back to Stratolaunch in the form of a new casting tower upon project completion. Any components made from NASA raw materials shall remain with NASA.)
6. Comply with NASA safety regulations, policies, and guidelines for observing the TPS process at NASA ARC.

ARTICLE 3. SCHEDULE AND MILESTONES

The planned major milestones for the activities for this Annex defined in the "Responsibilities" Article are as follows:

Deliverables listed in this Article match the numbering system from the NASA Responsibilities Article and are also referred to as subtasks. Note that the "Authority to Proceed" (ATP) requires appropriate signatures on this agreement from both Parties and a transfer of funds from the Partner to NASA ARC on a per subtask basis. Further note that the Partner can selectively fund any or all of the deliverables (subtasks) listed in this Article. Should Partner provide ATP and funding out of sequential order, NASA reserves the right to revise the estimated due date. The planned major milestones for the activities for this Annex defined in the "Responsibilities" Article are as follows:

| <u># Deliverables/Subtasks</u> | <u>Due Date</u> |
|---|--------------------------|
| 1. Develop a small billet process using new raw materials within ARC STAR labs. | ATP + 6 months |
| 2. Develop a large billet process using new raw materials within ARC STAR labs. | ATP + Task #1 + 5 months |
| 3. Design and build improved casting tower equipment for billet processing | ATP + 12 months |
| 4. Billet manufacture technology transfer. | ATP + Task #2 + 6 months |
| 5. Provide TPS subject matter expert support. | Throughout above tasks |
| 6. Provide additional process training at Ames | ATP + Task #4 + 3 months |
| 7. Provide additional process training at Stratolaunch. | ATP + Task #4 + 3 months |
| 8. Additional process refinement as needed to optimize billet processing. | ATP + Task #4 + 3 months |

ARTICLE 4. FINANCIAL OBLIGATIONS

A. Partner agrees to reimburse NASA to carry out its responsibilities on a per subtask basis under this Agreement. In no event will NASA transfer any U.S. Government funds to Partner under this Agreement. Payment must be made by Partner in advance of initiation of NASA's efforts on behalf of the Partner.

Partner can selectively fund any or all of the subtasks listed in this Article, which correspond to the NASA Deliverables/Subtasks listed in the previous Article. Deliverables/ Subtasks estimated costs are:

Deliverables/Subtasks

| <u># Description</u> | <u>Cost</u> |
|---|-------------|
| 1. Develop a small billet process using new raw materials within ARC STAR labs. | \$160k |
| 2. Develop a large billet process using new raw materials within ARC STAR labs. | \$210k |
| 3. Design and build improved casting tower equipment for billet processing | \$290k |
| 4. Billet manufacture technology transfer. | \$130k |
| 5. Provide TPS subject matter expert support. | \$40k |
| 6. Provide additional process training at Ames | \$40k |
| 7. Provide additional process training at Stratolaunch. | \$20k |
| 8. Additional process refinement as needed to optimize billet processing. | \$90k |

Each payment shall be marked with Ames, Annex One, SAA2-403646-1.

B. NASA will not provide services or incur costs beyond the current funding. Although NASA has made a good faith effort to accurately estimate its costs, it is understood that NASA provides no assurance that the proposed effort under this Annex will be accomplished for the estimated amount. Should the effort cost more than the estimate, Partner will be advised by NASA as soon as possible. Partner shall pay all costs incurred and have the option of canceling the remaining effort, or providing additional funding in order to continue the proposed effort under the revised estimate. Should this Annex be terminated, or the effort completed at a cost less than the agreed-to estimated cost, NASA shall account for any unspent funds within six months after completion of all effort under this Annex, and promptly thereafter, at Partner's option return any unspent funds to Partner or apply any such unspent funds to other activities under the Umbrella Agreement. Return of unspent funds will be processed via Electronic Funds Transfer (EFT) in accordance with 31 C.F.R. Part 208 and, upon request by NASA, Partner agrees to complete the Automated Clearing House (ACH) Vendor/Miscellaneous Payment Enrollment Form (SF 3881).

ARTICLE 5. INTELLECTUAL PROPERTY RIGHTS - DATA RIGHTS

A. Data produced under this Annex which is subject to paragraph C. of the Intellectual Property Rights - Data Rights Article of the Umbrella Agreement will be protected for the period of two years.

B. Under paragraph H. of the Intellectual Property Rights - Data Rights Article of the Umbrella Agreement, Disclosing Party provides the following Data to Receiving Party. The lists below may not be comprehensive, are subject to change, and do not supersede any restrictive notice on the Data provided.

1. Background Data:

The Disclosing Party's Background Data, if any, will be identified in a separate document.

2. Third Party Proprietary Data:

The Disclosing Party's Third Party Proprietary Data, if any, will be identified in a separate document.

3. Controlled Government Data:

The Disclosing Party's Controlled Government Data, if any, will be identified in a separate document.

4. The following software and related Data will be provided to Partner under a separate Software Usage Agreement:

None.

ARTICLE 6. TERM OF ANNEX

This Annex becomes effective upon the date of the last signature below ("Effective Date") and shall remain in effect until the completion of all obligations of both Parties hereto, or three years from the Effective Date, whichever comes first, unless such term exceeds the duration of the Umbrella Agreement. The term of this Annex shall not exceed the term of the Umbrella Agreement. The Annex automatically expires upon the expiration of the Umbrella Agreement.

ARTICLE 7. RIGHT TO TERMINATE

Either Party may unilaterally terminate this Annex by providing thirty (30) calendar days written notice to the other Party.

ARTICLE 8. POINTS OF CONTACT

The following personnel are designated as the Points of Contact between the Parties in the performance of this Annex.

Management Points of Contact

NASA Ames Research Center

Matt Holtrust
Agreement Manager
Mail Stop: 223-3, Room 100
Moffett Field, CA 94035
Phone: (650) 604-4069
matthew.j.holtrust@nasa.gov

Stratolaunch, LLC

Brandon Wood
Hypersonics Program Director
555 Riccomini St
Mojave, CA 93501
(661) 305-2964
brandon.wood@stratolaunch.com

Technical Points of Contact

NASA Ames Research Center

Jay Feldman
Research Materials Engineer
Mail Stop: 223-3
Moffett Field, CA 94035
Phone: 650.604.0406
jay.d.feldman@nasa.gov

Stratolaunch, LLC

Cedric Gould
Principal Hypersonics Engineer:
555 Riccomini St
Mojave, CA 93501
(661) 754-4364
cedric.gould@stratolaunch.com

ARTICLE 9. MODIFICATIONS

Any modification to this Annex shall be executed, in writing, and signed by an authorized representative of NASA and the Partner. Modification of an Annex does not modify the terms of the Umbrella Agreement.

ARTICLE 10. SIGNATORY AUTHORITY

The signatories to this Annex covenant and warrant that they have authority to execute this Annex. By signing below, the undersigned agrees to the above terms and conditions.

**NATIONAL AERONAUTICS AND
SPACE ADMINISTRATION
AMES RESEARCH CENTER**

BY: _____
Dr. Rupak Biswas
Director of Exploration Technology

DATE: _____

STRATOLAUNCH, LLC

Zachary C.
BY: Krevor
Zachary C. Krevor
President and Chief Operating Officer

Digitally signed by Zachary
C. Krevor
Date: 2022.02.23 20:22:02
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DATE: 02/23/22